Shaded sites and instruments are inactive

Ia. PIs, Instruments, and Deployments (Listed according to NDACC Primary Station)

Arctic Station (Eureka: 80.05˚N, 86.42˚W)

Dobson/Brewer	V. Fioletov and C. T. McElroy (MSC) – Brewer measurements when sunlit conditions permit beginning in January 1991. Brewer measurements are currently being conducted at the nearby Eureka weather station (79.99˚N, 85.90˚W).
FTIR	H. Fast (MSC) and K. Shibata (MRI) – Bomem DA8 system (0.004 cm^{-1} resolution) deployed in February 1993. Intercompared with NPL mobile instrument in spring 1999. Operations suspended from summer 2002 to winter 2004. Campaign operations in spring 2005 and 2006 (planned).
Lidar (Aerosol)	T. Nagai (MRI) and O. Uchino (MRI) – Nd:YAG Lidar (1064 and 532 nm; dual polarization) deployed in February 1993. Present operations are winter only. Operations have been expanded to allow for tropospheric retrievals. Operation suspended after spring 2002.
Lidar (Ozone)	K. Strawbridge (EC) – DIAL system (XeCl excimer laser similar to that at Toronto: 43.66˚N, 79.40˚W) deployed in February 1993 for winter season, nighttime only operations. Operation suspended for 2002 and 2003, and resumed in 2004. The system has five detection channels, four receiver channels (2 Raman, 2 Rayleigh) to improve the ozone profile in the presence of aerosols, and one channel for water vapor. Also retrieves temperature profiles in the stratosphere. Recent measurements have focused on the approximately 4-week period leading up to polar sunrise.
Sondes (Ozone)	H. Fast (MSC) – ECC sondes launched once per week year-round beginning in November 1992, with two additional soundings per week in winter. Launches are currently taking place at the nearby Eureka weather station (79.99˚N, 85.90˚W).

Shaded sites and instruments are inactive

Arctic Station (Ny Ålesund: 78.92˚N, 11.93˚E)

Dobson/Brewer	A. Dahlback (U. Oslo) – Dobson observations when sunlit conditions permit beginning in November 1966. Measurements have been suspended due to a lack of funding. If no funding can be established, the instrument may be considered for relocation. Replacement of the Dobson and/or continuation with a Brewer is planned, but funding is not yet secured.
FTIR	J. Notholt (U. Bremen) and O Schrems (AWI) – Bruker 120HR (0.0028 cm^{-1} resolution) replaced Bruker 120M in 1995 (see later listing in Mobile Instruments section). Operates all year with lunar (polar night) observations added since December 1992.
Lidar (Aerosol and Temperature)	O. Schrems and R. Neuber (AWI) – Multi-wavelength system (excimer and Nd:YAG) making winter measurements between 10 and 45 km since 1991. A four-channel receiver was added in 1999 for tropospheric aerosol and water vapor measurements.
Lidar (Ozone)	R. Neuber and O. Schrems (AWI) – Multi-wavelength system (excimer and Nd:YAG) making winter measurements between 13 and 45 km since 1991.
Microwave (ClO)	J. Notholt (U. Bremen) and O. Schrems (AWI) – Campaign operations in winter of 1993/94; permanent operation in winter/spring since 1995. Participated in a ClO radiometer intercomparison at Ny Ålesund in spring 1997. Data since 1995.
Microwave (Ozone)	J. Notholt (U. Bremen) and O. Schrems (AWI) – Campaign operations in winters of 1992/93 and 1993/94; permanent operations since November 1994.
Microwave (Water Vapor)	J. Notholt (U. Bremen) and O. Schrems (AWI) – In operation since January 1999.
Sondes (Aerosol)	J. Rosen (U. Wyoming) – Backscatter measurements of aerosol profiles available since January 1996.
Sondes (Ozone)	P. von der Gathen (AWI) – Year-round soundings since 1992.

UV/Vis. Spectrometer	K. Stebel, C. Lund Myhre, and B. A. Kåstad Høiskar (NILU) – SAOZ NO_2 and ozone system operating since September 1990.
UV/Vis. Spectrometer	J. P. Burrows and A. Richter (U. Bremen) – Measurements of ozone, NO_2, BrO, IO, and OClO from February to May and August to November. Participated in intercomparison at OHP in June 1996. Database extends to 1995.

Arctic Station (Thule: 76.53˚N, 68.74˚W)

Dobson	P. Eriksen (DMI) – Dobson spectrometer #092 operating at Qaanaaq for solar and lunar measurements beginning in 2000. Instrument completely refurbished and calibrated in 2004.
FTIR	M. Coffey and J. Hannigan (NCAR) – Bruker 120M (0.004 cm^{-1} resolution) installed at South Mountain in 1999, operating under autonomous control. Also capable of lunar observations. Operated an older instrument at Søndre Stromfjord (67.02˚N, 50.72˚W) during the 1994/95 winter for SESAME.
Lidar (Aerosol and Temperature)	G. Fiocco, D. Fuà, and A. di Sarra (U. Rome) – Winter-only measurements for two to three years beginning November 1990; year-round operation with daylight observations began July 1993. Did not operate in early 1998, late 1999, 2004, or 2005.
Sondes (Aerosol)	J. Rosen (U. Wyoming) and N. Larsen (DMI) – Backscatter measurements of aerosol profiles available for January 1992 – December 1998.
Sondes (Ozone)	S. B. Andersen (DMI) – Soundings made during campaigns. Database extends back to October 1991.
UV/Vis. Spectrometer	S. B. Andersen and P. Eriksen (DMI) – SAOZ system for NO_2 and ozone column measurements operating since September 1990.

Shaded sites and instruments are inactive

Arctic Station (Søndre Stromfjord: 67.02˚N, 50.72˚W)

Dobson/Brewer	P. Eriksen (DMI) – Brewer observations when sunlit conditions permit beginning in February 1998.
Lidar (Temperature)	C. Heinselman (SRI) and J. Thayer (U. Colorado) – Rayleigh/Mie system in operation since November 1992. Presently operates year-round and has a daylight-measurement capability. Also retrieves backscatter-ratio profiles of noctilucent clouds and polar stratospheric clouds.
Sondes (Aerosol)	J. Rosen (U. Wyoming) and N. Larsen (DMI) – Backscatter measurements of aerosol profiles available for January 1995 and January 1996.

Alpine Station (Garmisch: 47.48˚N, 11.06˚E / Zugspitze : 47.42˚N, 10.98˚E)

FTIR	R. Sussmann (IMK-IFU) – Bruker 120HR (0.0028 cm^{-1} resolution) operating since 1995. Remote control of measurements implemented in early 1998. Column retrieval and a priori profile optimization fully automated.
Lidar (Aerosol)	T. Trickl (IMK-IFU) – System at Garmisch similar to the instrument at Mauna Loa (19.54˚N, 155.58˚W); operated as a ruby system from 1976 to 1990 and as a Nd:YAG system since 1991.
Spectral UV	P. Werle (IMK-IFU) – Measurements of spectral distribution of UV irradiance using a double monochromator since 1994 at Garmisch and since 1995 at Zugspitze. Work initiated at both sites for the ground truthing of satellite-derived UV maps. Prior to 2000, the PIs for these measurements at both sites were G. Seckmeyer and S. Thiel. Garmisch operations were suspended in 2002.

Alpine Station (Bern: 46.95˚N, 7.45˚E)

Microwave (Ozone)	N. Kämpfer (U. Bern) – Volume mixing ratio profiles (20 to 80 km) since November 1994. Site is 60 km from the Jungfraujoch. Intercompared with Payerne, Switzerland (46.8˚N, 7.0˚E) ozonesondes. In the long-term future, this instrument will be replaced. A new instrument is operating on a regular basis in Payerne.

Microwave (Water Vapor)	N. Kämpfer (U. Bern) – Volume mixing ratio profiles (20 to 70 km) since late 2002. Instrument validated against balloon sondes for 20 to 25 km, and against HALOE and POAM above 25 km. H_2O profiles will be provided with an integration time of 12 to 24 hours, weather permitting. For details, refer to http://www.iapmw.unibe.ch/research/projects/MIAWARA/

Alpine Station (Payerne: 46.82˚N, 6.95˚E)

Microwave (Ozone)	D. Ruffieux and P. Viatte (MeteoSwiss) – Deployed from January 2000 to June 2002 in Bern (46.95˚N, 7.45˚E, prior to permanent siting at Payerne. The instrument provides 48 ozone profiles a day for altitudes ranging from 20 to 70 km.
Sondes (Ozone)	R. Stübi and P. Viatte (MeteoSwiss) – Observations with Brewer Mast ozonesondes three times per week beginning November 1966.

Alpine Station (Jungfraujoch: 46.55˚N, 7.98˚E)

FTIR	P. Demoulin and E. Mahieu (U. Liège) – Double-pass grating instrument operated routinely from 1977 until October 1989 (limited data back to 1950). Two FTIR systems have been used since 1984 (a home-built unit with 0.0028 cm^{-1} resolution) and 1990 (Bruker 120HR with 0.0015 cm^{-1} resolution). Operated in collaboration with M. De Mazière (IASB-BIRA).
UV/Vis. Spectrometer	M. De Mazière (IASB-BIRA) – SAOZ system for NO_2 and ozone operated since June 1990. Upgraded with new detector (more pixels) and control system in late 1998.

Alpine Station (Briançon, France: 44.90˚N, 6.65˚E)

Spectral UV	A. de la Casinière and T. Cabot (IRSA, UJF Grenoble) – Measurements of spectral UV irradiance with two instruments. The first UV spectroradiometer (SPUV02, JY DH10 system) began operations in 2000. The instrument was intercompared at Huelva, Spain in 2002. The other UV spectroradiometer (IRSA, Bentham DM150 system) has been operational since 2001.

Alpine Station (Observatoire de Bordeaux: 44.83˚N, 0.52˚W) - Inactive

Dobson/Brewer	J. de La Noë (Bordeaux) – Daily Dobson #49 observations beginning in 1985, but previously carried out at Biscarosse (60 km from Bordeaux) from 1976 to 1983. Instrument moved to Observatoire Midi-Pyrénées/Lannemezan in September 2004.
Microwave (Ozone)	J. de La Noë and N. Schneider (Bordeaux) – Profiles from 25 to 70 km obtained on a year-round basis since January 1995. Ceased operations in 2004.

Alpine Station (Plateau de Bure: 44.63˚N, 5.90˚E) - Inactive

Microwave (ClO)	J. de La Noë, P. Ricaud, and P. Baron (Bordeaux) – One of three NDACC instruments developed by Millitech. Profile measurements (25 to 50 km) since December 1993; compromised by poor weather. Underwent summer 1996 intercomparison at Mauna Loa (19.54˚N, 155.58˚W). Measurements resumed in October 1998 following instrument repair. Instrument operations ended in December 1999 following a crash of the helicopter used to access the site. The instrument was returned to A. Parrish (U. Massachusetts) in October 2002.

Alpine Station (Observatoire Haute Provence: 43.94˚N, 5.71˚E)

Dobson/Brewer	R. De Backer-Barilly (GSMA Reims)) and S. Oltmans (GMD) – Total ozone and Umkehr database using a Dobson instrument extends back to 1983.
Lidar (Aerosol)	C. David and Ph. Keckhut (CNRS) – Began NDACC operations in March 1991.
Lidar (Ozone)	S. Godin-Beekmann (CNRS) – Began NDACC operations in January 1991. Database extends back to October 1986. New lidar system installed in 1994. Participated in July 1997 intercomparison with GSFC mobile lidar and ozonesondes.

Lidar (Temperature)	A. Hauchecorne and Ph. Keckhut (CNRS) – Began NDACC operations in January 1991. Database extends back to 1979. Participated in July 1997 intercomparison with GSFC mobile lidar and ozonesondes.
Lidar (Trop. Ozone)	G. Ancellet (CNRS) – Tropospheric ozone measurements; database extends back to 1990.
Sondes (Ozone)	S. Godin-Beekmann and G. Ancellet (CNRS) – Soundings conducted approximately once per week since 1986. Participated in July 1997 intercomparison with GSFC mobile lidar.
UV/Vis. Spectrometer	F. Goutail (CNRS) – SAOZ system for NO_2 and ozone operating since June 1992; NDACC intercomparisons in 1992, 1995, 1996, and 2003.

Alpine Station (Observatoire Midi-Pyrénées/Lannemezan: 43.07.46˚N, 0.22.08˚E)

Dobson/Brewer	P. Ricaud (U. Paul Sabatier) – Daily Dobson #49 observations beginning in October 2004, continuing previous observations at Biscarosse (60 km from Bordeaux) from 1976 to 1983 and Observatoire de Bordeaux (44.83˚N, 0.52˚W) from 1985 to 2004.

Hawaii Station (Mauna Kea: 19.83˚N, 155.48˚W)

Microwave (ClO)	P. Solomon (SUNY) and A. Parrish (Millitech & U. MA) – One of three NDACC instruments developed by Millitech; in operation since 1992. Two instruments were intercompared at this site for 22 months from 1993 to 1995 prior to the Antarctic deployment of one of them (see later entry).

Hawaii Station (Hilo: 19.72˚N, 155.07˚W)

Sondes (Ozone)	B. Johnson and S. Oltmans (GMD) – Weekly soundings since 1982.

Hawaii Station (Mauna Loa: 19.54˚N, 155.58˚W)

Dobson/Brewer	R. Evans and S. Oltmans (GMD) – Daily Dobson observations beginning December 1963, with about 20 Umkehr retrievals per month.
FTIR In review/update pending	D. Murcray and R. Blatherwick (U. Denver) – Bomem DA8 (0.004 cm^{-1} resolution) operated once per week from November 1991 to November 1995. Automated Bruker 120HR (0.0035 cm^{-1} resolution) installed August 1995. Operations ceased in 2001.
Lidar (Ozone)	I. S. McDermid, T. Leblanc, and T. D. Walsh (JPL) – Multi-wavelength system (ozone, temperature, and aerosol); deployed in July 1993.
Lidar (Aerosol and Temperature)	I. S. McDermid, T. Leblanc, and T. D. Walsh (JPL) – Multi-wavelength system (ozone, temperature, and aerosol); deployed in July 1993. J. E. Barnes and D. J. Hofmann (GMD) – Ruby and Nd:YAG systems; aerosol database extends back to 1974 for ruby system and April 1994 for Nd:YAG system; temperature retrievals began in June 1994. Ruby system ceased operations in January 1998. Nd:YAG system also retrieves water vapor.
Microwave (Ozone)	A. Parrish (Millitech & U. MA) and I. S. Boyd (NIWA) – One of two Millitech-built systems; installed in 1995 following testing and intercomparisons at Table Mountain Facility (34.4˚N, 117.7˚W). Participated in intercomparison at Mauna Loa in July 1995. Retrieving profiles from 20 to 64 km from July 1995 to April 1996 and continuing from August 1996.
Microwave (Water Vapor)	G. Nedoluha, R. Bevilacqua, and R. M. Gomez (NRL) – NRL Water Vapor Microwave Spectrometer #3 (WVMS3) operating since March 1996 following testing at Table Mountain Facility (34.4˚N, 117.7˚W).
Spectral UV	R. L. McKenzie and P. V. Johnston (NIWA) and D. J. Hofmann (GMD) – Measurements of the spectral distribution of UV irradiance using a double monochromator initiated in 1995.
UV/Vis. Spectrometer	P. V. Johnston (NIWA) and D. J. Hofmann (GMD) – NIWA system deployed in July 1996 for NO_2 and ozone; upgraded for BrO measurements in 1999. BrO instrument failed late 2003; restored with new, improved instrument June 2005.

New Zealand Station (Lauder: 45.04˚S, 169.68˚E)

Dobson/Brewer	G. Bodeker (NIWA) and R. Evans (GMD) – Daily Dobson observations beginning January 1987.
FTIR	S. Wood and W. A. Matthews (NIWA) – Bruker 120M (0.004 cm^{-1} resolution) operating since August 1990; Bruker 120HR (0.0028 cm^{-1} resolution) added in August 2000.
Lidar (Aerosol)	B. Liley (NIWA) – Mobile Nd:YAG system operated extensively at Tsukuba (36.05˚N, 140.13˚E) for retrievals from 6 to 36 km; deployed at Lauder in November 1992. Operated weekly. Data archived to May 1999, with revision and update in progress. B. Liley (NIWA) – System used initially at Dumont d'Urville (66.67˚S, 140.01˚E). Aerosol profile data (5 to 35 km) for Lauder available from 1994 to 1997. Operated weekly, but laser is failing. Data revision and update to follow same for Japanese lidar described in previous entry.
Lidar (Ozone)	D. P. J. Swart and Y. Meijer (RIVM), and G. Bodeker (NIWA) – Installed November 1994. Participated in 1995 OPAL intercomparison with GSFC mobile lidar, LaRC microwave ozone radiometer, and ozonesondes. Retrieving between 8 and 50 km year-round. Also retrieves aerosols (8 to 25 km).
Microwave (Ozone)	A. Parrish (Millitech and U. MA), and I. S. Boyd and B. J. Connor (NIWA) – Retrieving profiles from 20 to 65 km from November 1992 to April 1993 and continuing from September 1993. Instrument is identical to Mauna Loa system and participated in intercomparisons at Table Mountain Facility (34.4˚N, 117.7˚W) in July 1989. Observatoire Haute Provence (43.94˚N, 5.71˚E) in July 1992, and Lauder in April 1995. This instrument also operated at Table Mountain Facility from July to November 1989 and from May 1990 to June 1992.

Microwave (Water Vapor)	G. Nedoluha, R. Bevilacqua, R. M. Gomez (NRL), and B. J. Connor (NIWA) – NRL WVMS1 deployed from November 1992 to April 1993 and January 1994 to present following tests and intercomparisons at Table Mountain Facility (34.4˚N, 117.7˚W); presently retrieving from 40 to 80 km.
Sondes (Aerosol)	J. Rosen (U. Wyoming) and B. Liley (NIWA) – Backscatter measurements of aerosol profiles (0 to 34 km) monthly from February 1994 – 1998; two to three times per year beginning in 1999. No current activity; funding ceased in 1999.
Sondes (Ozone)	G. Bodeker (NIWA) – Weekly ECC sondes year-round since August 1986 for obtaining profiles of ozone, temperature, pressure, and winds from 0 to 32 km.
Spectral UV	R. L. McKenzie and P. V. Johnston (NIWA) – Measurements of the spectral distribution of UV irradiance using a double monochromator since December 1989. In November 1993, the original UVL spectrometer (JYDH10), which allowed observations only in fair-weather conditions, was replaced by the UVM spectrometer (Bentham DM300). In September 1998, the integrating sphere on this instrument was replaced by a PTFE diffuser to allow all-weather observations, including rain. There have been occasional periods of spectral sky radiance and spectral actinic flux observations. The latter also may be derived from spectral irradiance measurements. A variety of filter radiometers also have been used since 1992. Information regarding specific instruments and deployments are available from the PIs.
UV/Vis. Spectrometer	P. V. Johnston and W. A. Matthews (NIWA) – Zenith measurements of NO_2 and ozone database extends back to 1980; BrO/OClO since 1995; direct sun from 2001; MAXDOAS from 2004.

Shaded sites and instruments are inactive

Antarctic Station (Dumont d'Urville: 66.67˚S, 140.01˚E)

Lidar (Aerosol)	C. David (CNRS) and M. Snels (ISAC-CNR) – Operated from March through November from 1989. Data archived through 1998. Data from 1999 to 2002 poor quality due to instrument degradation. Instrument inactive since 2002. New lidar installed in 2005, and is undergoing tests.
Lidar (Ozone)	M. Marchand (CNRS) and F. Cairo (CNR-ISAC) – Operated from 1991 to 2001 (data are archived under the responsibility of S. Godin-Beekmann). Operations ceased in 2001 due to instrument problems. New instrument installed January 2005, and is undergoing tests. Will operate from March to November.
Sondes (Ozone)	M. Marchand (CNRS) – Approximately 25 soundings per year. Database extends back to 1990.
UV/Vis. Spectrometer	F. Goutail (CNRS) – SAOZ system operating since January 1988.

Antarctic Station (Arrival Heights: 77.82˚S, 166.65˚E)

Dobson/Brewer	S. Nichol and S. Wood (NIWA) – Daily Dobson (sun and moon) observations beginning January 1988.
FTIR	S. Wood (NIWA) and F. Murcray (U. Denver) – Bruker 120M (0.004 cm^{-1} resolution) installed in December 1996; lunar operation upgrade in 1999. Earlier measurements dating back to 1987 were made using a Bomem DA2 (0.02 cm^{-1} resolution) and an Eocom (0.06 cm^{-1} resolution).
Sondes (Aerosol)	J. Rosen (U. Wyoming) – Backscatter measurements of aerosol profiles available for November – December 1993.
UV/Vis. Spectrometer	S. Wood and K. Kreher (NIWA) – NIWA system with an NO_2 and ozone database extending back to 1982; OClO since 1993; BrO since 1995; MAXDOAS since 2001.

Shaded sites and instruments are inactive

Antarctic Station (McMurdo: 77.85˚S, 166.63˚E)

Lidar (Aerosol)	M. Snels (CNR-ISAC), F. Cairo (CNR-ISAC), and G. Di Donfrancesco (ENEA) – Database extends back to 1990. Measurements are made presently from February through October; year-round operations are being explored.
Sondes (Ozone)	T. Deshler (U. Wyoming) – Database dates back to 1986; twice per week springtime measurements only except for 1994 when operations were conducted in the winter period as well.
UV/Vis. Spectrometer	S. Solomon (NOAA) – Database taken by R. Sanders (deceased) from February 1991 through February 1994 in the NDACC archive.

Antarctic Station (Scott Base: 77.85˚S, 166.78˚E)

Microwave (ClO)	P. Solomon (SUNY) and B. J. Connor (NIWA) – Millitech instrument deployed in January 1996 following measurements and intercomparisons at Mauna Kea (19.83˚N, 155.48˚W).

Antarctic Station (South Pole Station: 90.00˚S)

Dobson/Brewer	R. Evans and S. Oltmans (GMD) – Daily Dobson observations beginning November 1961. In 2004, Dobson No. 80 temporarily replaced Dobson No. 82, which will be recalibrated. No. 82 is scheduled for reinstallation in 2008.
Sondes (Aerosol)	J. Rosen (U. Wyoming) – 11 backscatter sondes were launched during the winters of 1990 and 1991.
Sondes (Ozone)	B. Johnson and S. Oltmans (GMD) – Approximately 75 soundings per year since 1986.

Mobile/Campaign Instruments

FTIR	O. Schrems (AWI) and J. Notholt (U. Bremen) – Bruker 120M (0.004 cm^{-1} resolution), deployed 1992 to 1995 at Ny Ålesund (78.92˚N, 11.93˚E) and now utilized as a mobile instrument. Operated as part of the ALBATROSS ship-based expedition from 70˚N to 40˚S during October and November 1996. Participated in ship-based expeditions in 1999/2000, from 80˚N to 70˚S, as well as additional ship-based campaigns in January/February 2003, October/November 2003, and October/November 2005. A second Bruker 120M exists for tropical deployment. Campaign participation in Paramaribo included September/November 2004, February/March, 2005, and October 2005.
FTIR	P. Woods and T. Gardiner (NPL) – Bruker 120M (0.004 cm^{-1} resolution) used for intercomparisons and campaigns. Comparisons have been conducted at Ny Ålesund (78.92˚N, 11.93˚E), Harestua (60.2˚N, 10.8˚E), Jungfraujoch (46.55˚N, 7.98˚E), Table Mountain Facility (34.4˚N, 117.7˚W), Lauder (45.04˚S, 169.68˚E), and Eureka (80.05˚N, 86.42˚W).
Lidar (Aerosol)	O. Schrems (AWI) – Mobile Aerosol Raman Lidar, participated in a ship-based expedition (ALBATROSS campaign) from 70˚N to 40˚S from October to November 1996; the STRAIT intercomparison campaign at TMF in February/March 1997; the NAOMI intercomparison in Ny Ålesund (78.92˚N, 11.93˚E) in January/February 1998; the INCA campaign in Punta Arenas, Chile in March/April 2000; the LIMPIDO ship-based campaign from 53˚S to 53˚N in May/June 2000; a campaign at the Meteorological Observatory in Lindenberg, Germany from April to September 2003; a ship-based campaign from 53˚N to 33˚S in October/November 2003; and the STAR campaign at Paramaribo, Suriname (5.75˚N, 55.2˚W) from September to November 2004 and March 2005.

Lidar (Aerosol, Ozone, Temperature, and Water Vapor)	T. J. McGee (GSFC), L. Twigg (SSAI), and G. Sumnicht (SSAI) – Mobile intercomparator (STROZ) that has participated in ozone intercomparisons at Table Mountain Facility (34.4˚N, 117.7˚W); Observatoire Haute Provence (43.94˚N, 5.71˚E); Lauder (45.04˚S, 169.68˚E); Mauna Loa (19.54˚N, 155.58˚W), Ny Ålesund (78.92˚N, 11.93˚E); and Hohenpeissenberg (47.8˚N, 11.0˚E). The STROZ lidar retrieves ozone vertical profiles in the stratosphere from 10 to 50 km. Temperature to ~80 km and aerosols (at 355 nm) to 35 km also are measured. The instrument recently has been modified to measure water vapor from near the ground to ~10 km. The STROZ lidar will be used in Sodankylä, Finland (67.37˚N, 26.63˚E) for a high-latitude comparison of a variety of ground-based instruments.